

DEVELOPMENT OF ANDROID-BASED LEARNING MEDIA EDUCATIONAL APPLICATION FOR QURBAN AND AQIQAH LEARNING MATERIAL IN GRADE 9 AT SMPN 5 PONOROGO

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ABSTRACT

Technological developments actually have an influence on the world of education, for example in the learning process, which at this time should be accompanied by the use of technology such as using a more varied learning media. In learning practices that still seem monotonous, learning situations run passively and students only receive material. In this case, teachers should be able to take advantage of learning media. This research is a Research and Development study by carrying out several steps from the ADDIE research model, i.e. analysis, design, development, implementation and evaluation. This study aims to determine (1) the effectiveness of learning media educational application and (2) the effectiveness of learning media educational application. The results of the research are the results of the implementation of learning media and the effectiveness of learning media. (1) Learning media educational application products can be implemented with an average implementation of 95% learning media in the very good category. Apart from that, the responses of the students showed an average percentage of 93% in the very good category. (2) Learning media educational application products are effectively used as learning media with the results of the paired T Test in the field test obtaining a significance of 0.000 which is less than the significance level of 0.05 and the average N Gain result of 0.6891 which states that the effectiveness of learning media is categorized currently.

Keywords: *Aqiqah, Education Application, Learning Media, Sacrifice*

ABSTRAK

Perkembangan teknologi ternyata memiliki pengaruh terhadap dunia pendidikan, contohnya dalam proses pembelajaran, yang saat ini sudah sepatutnya disertakan dengan pemanfaatan teknologi seperti menggunakan media pembelajaran yang lebih variatif. Dalam praktik pembelajaran yang masih terkesan monoton, situasi pembelajaran berjalan pasif dan peserta didik hanya menerima materi. Akan hal tersebut, guru seharusnya dapat memanfaatkan media pembelajaran. Penelitian ini merupakan penelitian *Research and Development* dengan melakukan beberapa langkah dari model penelitian ADDIE yaitu analisis, desain, pengembangan, penerapan dan evaluasi. Penelitian ini bertujuan untuk mengetahui (1) keterlaksanaan media pembelajaran aplikasi edukasi dan (2) keefektifan media pembelajaran aplikasi edukasi. Hasil penelitian berupa hasil pelaksanaan media pembelajaran dan keefektifan media pembelajaran. (1) Produk media pembelajaran aplikasi edukasi dapat terlaksana dengan rata-rata pelaksanaan media pembelajaran 95% dengan kategori sangat baik. Selain itu dari respon peserta didik menunjukkan rata-rata persentase 93% dengan kategori sangat baik. (2) Produk media pembelajaran aplikasi edukasi efektif digunakan sebagai media pembelajaran dengan hasil uji *paired T Test* pada uji lapangan memperoleh signifikansi 0,000 yang kurang dari taraf signifikansi 0,05 dan hasil rata-rata *N Gain* 0,6891 yang menyatakan efektivitas media pembelajaran dikategorikan sedang.

Kata kunci: *Aplikasi Edukasi, Media Pembelajaran, Qurban, Aqiqah*

Introduction

According to Susanto and Hariyanto, learning is an activity in which the teacher teaches or guides the children. Learning is a process carried out by individuals to obtain changes in behaviour towards the maturation process with the help of the teacher (Setiawan MA). According to Marimba, education is conscious guidance for educational participants on their physical and spiritual development towards the formation of the main personality (Nurjannah, 2016).

Learning Islamic education that is expected to bring change has some basic materials such as worship, history, etc. The study of worship includes prayer, *zakat*, fasting, pilgrimage and *umrah*, as well as *aqiqah* and *qurban*. Each of these materials aims to increase students' knowledge besides that it can also be a provision in their lives (Nurnaningsih, 2013). In addition, to produce learning outcomes in Islamic education with learning activities that applies relevant methods, strategic approaches and models. Effective learning requires media that is representative and supported by models that can develop students' knowledge. To establish student competence, teachers must become facilitators and mediators (Dzul kifli, 2022).

Based on the results of observations, problems were found regarding the learning process that occurred at SMPN 5 Ponorogo, Islamic education learning was carried out as usual, using learning media in the form of books, and still not taking advantage of technological developments even though students were allowed to bring cell phones to school. With the use of monotonous learning media, it certainly has an impact on students themselves, such as becoming lazy, and the material presented difficult to understand. As in *Qurban and Aqiqah* learning material, the sub-chapters are classified as many and are repeated, because the provisions for slaughter as a whole are almost the same. With monotonous materials, models, and media used in learning, it will make the class atmosphere seem boring and less attractive to students.

In this case, the teacher must be able to take advantage of science and technology developments that encourage renewal efforts in utilizing technology as a learning process. In the field of education, it can be applied in several aspects such as development, implementation and assessment. This educational application itself is a tool or media in the form of software that can be used to facilitate human work (Saputra, 2019). Using educational applications that are trusted sources can make learning easier anywhere. This educational application is made specifically for learning media that is in accordance with the concepts and themes. By utilizing this educational application media, it is hoped that each student will more easily understand the learning content during the learning process (Maulana, 2018).

By using Android-based educational applications as learning media, it makes the learning process more interesting because it can display animations and short explanatory language so that students can easily understand it. By this knowledge, the learning information they need is easier to find (Ginting, 2019). The development of science and technology can be implemented in Islamic education as a learning media. Learning media can provide clarity on the material delivered by the teacher and can make it easier for students to understand the material (Setiawan A., 2019). Based on the description of the problems above, this study will develop an Android-based learning media educational application for *Qurban and Aqiqah* learning material.

Methods

The research method used is Research and Development. This study was conducted to develop products to be more effective and efficient. According to Borg and Gall (1983), development research is a process used to develop and validate existing products or new products, and to find knowledge or answer problems (Hamzah, 2019). In this study, it refers to the ADDIE research model, i.e. Analysis, Design, Development, Implementation, and Evaluation.

Data collection on learning media educational application was obtained at SMPN 5 Ponorogo. With a population of students in grades 9-A to 9-I totalling 230 students. The subjects of this study were students in grade 9-G as a group test class of 10 students and grade 9-E and 9-I as field test classes. The subjects of data collection in this study were grade 9 students. With certain considerations sampling technique, it adjusts to the *Qurban and Aqiqah* learning material.

The research procedure uses the ADDIE development model that consists of 5 steps, i.e. analysis, design, development, implementation and evaluation. The following are the stages in the ADDIE development model. First is analysis. At this stage, researchers carried out an analysis of the problems from various relevant previous studies and this study. Second is design. This stage plans the learning design that will be carried out. Third is development. This stage carried out product development in accordance with the design to produce the exact product. Fourth is implementation. At this stage, the results of research products are subjected to group testing and field-testing to determine the implementation and effectiveness of learning media. Fifth is evaluation. This is an evaluation of the four stages that have been carried out before is carried out.

This study used research instruments in the form of questionnaires and assessment sheets. Questionnaire sheets were given to Islamic Education teachers and participants to find out the implementation of learning media. The assessment sheet is in the form of a test question sheet consisting of a pre-test and post-test to measure students' abilities. Data collection techniques are observation, questionnaires, and tests. Observations are used to observe the use of learning media, student character, and analyze student needs to develop products. The questionnaire used is in the form of observation sheets and student response sheets. Tests in this study were also carried out in the form of pre-tests and post-tests to determine students' abilities before and after the implementation of learning media products.

The data analysis technique used is to test the applicability of the media with a Likert scale. The effectiveness test was carried out by testing students through an assessment instrument. Test the effectiveness of learning media using the N Gain test. The following is the formula for the N Gain test: Before the N Gain test is carried out, a prerequisite test and a hypothesis test are carried out first. The normality test is used to determine whether the data obtained is normally distributed or not. Normality test uses SPSS version 20 with Kormogolov Smirnov Shapiro-Wilk. The data is said to be normally distributed if the significant value is > 0.05 or 0.01 (Julisyah, 2016) or H_0 is accepted.

The paired sample t test is a test conducted by paired data. This test is conducted to determine whether there is a change in student learning outcomes before and after using learning media. The following is the formulation of the problem. Test the paired t test sample. Paired t test sample uses SPSS version 20 with two failed and one failed. The data is said to complete H_a if the significant value is > 0.05 (Wulandari).

Results and Discussion

The presentation of the results of development research based on the ADDIE development model is:

Analysis

At this stage, the researchers analyzed the use of learning media for *Qurban and Aqiqah* learning material in grade 9 at SMPN 5 Ponorogo. Based on the results of interviews and observations, the use of learning media is important for the success of learning. Meanwhile, in SMPN 5 Ponorogo itself the use of learning media is less communicative and varied, by looking at technological developments and at the school also allowing students to bring cell phones they must be put to good use as learning media.

Design

At this stage, the researchers compiled an Android-based learning media educational application design using Microsoft PowerPoint, iSpring suite, and web 2apk java builder.

Table 1. Storyboard Design

| | |
|------------------------------|----------------------------|
| Slide 1 | Main menu page |
| Slide 2 | Application instructions |
| Slide 3 | Menu page |
| Slide 4 | Learning objectives page |
| Slide 5 | Learning video page |
| Slide 6 | Material introductory page |
| Slide 7 - 16, 21 - 30 | Material exposure page |
| Slide 17, 31 | Conclusion page |
| Slide 18, 31, 38 | Quizzes page |

Development

At this stage, researchers will develop existing designs by utilizing several software applications such as Microsoft PowerPoint, ispring suite 9, web 2apk builder. In developing this learning media educational application, it starts with searching for components on the freepik site, and then continues with designing in Microsoft PowerPoint and incorporating previously designed material.

Table 2. Application Concept Description

| | |
|----------------------|--|
| Title | Android-based learning media educational application for <i>Qurban and Aqiqah</i> learning material |
| Name *Apk | Online smart class |
| Audience | Grade 9 students at SMPN 5 Ponorogo |
| Duration | Unlimited |
| Description | An educational application that contains <i>Qurban and Aqiqah</i> learning material that can be used on Android and can be accessed offline. |
| Text | The text is generated directly in the application authoring software |
| Picture | Images created in *.jpg format |
| Interactivity | Button next, back, exit. |
| Feature | Learning videos, introduction to material, quizzes |

Table 3. Educational Applications Display



Implementation

Group test

a. Observation of the implementation of learning media

Table 4. Observation Results Islamic Education Teacher and Observer

| Assessment Aspects | Score Result | | Max Score | | Percentage | | Category | |
|-------------------------------|--------------|--------|-----------|--------|------------|--------|-----------|-----------|
| | Test 1 | Test 2 | Test 1 | Test 2 | Test 1 | Test 2 | Test 1 | Test 2 |
| Objective | 17 | 19 | 20 | 20 | 85% | 95% | Very good | Very good |
| Material | 26 | 28 | 30 | 30 | 87% | 93% | Very good | Very good |
| Use of learning media | 17 | 19 | 20 | 20 | 85% | 95% | Very good | Very good |
| The success of learning media | 16 | 19 | 20 | 20 | 80% | 95% | Very good | Very good |
| Amount | 76 | 90 | | | | | | |
| Percentage average | | | | | 84% | 95% | Very good | Very good |

Based on table 4 above, it can be seen the results of observations by Islamic Education teachers and observers to determine the implementation of learning media. First, the objective aspect experienced an increase in results from trial 1 to trial 2, i.e. from 85% to 95%. Second, the material aspect has increased from 87% to 93%. Third, the aspect of using learning media has increased from 80% to 95%. Fourth, the success aspect of learning media has increased from 80% to 95%. Based on the percentage results above, it shows a very good category so that learning media is carried out.

Table 5. Student Responses Results

| Assessment Aspects | Score Result | | Max Score | | Percentage | | Category | |
|-------------------------------|--------------|--------|-----------|--------|------------|--------|-----------|-----------|
| | Test 1 | Test 2 | Test 1 | Test 2 | Test 1 | Test 2 | Test 1 | Test 2 |
| Objective | 81 | 472 | 100 | 510 | 81% | 93% | Very good | Very good |
| Material | 147 | 724 | 150 | 765 | 98% | 95% | Very good | Very good |
| Use of learning media | 93 | 467 | 100 | 510 | 93% | 92% | Very good | Very good |
| The success of learning media | 132 | 722 | 150 | 765 | 88% | 94% | Very good | Very good |
| Amount | 453 | 2385 | | | | | | |
| Percentage average | | | | | 90% | 93% | Very good | Very good |

Table 5 is the result of student responses to determine the implementation of learning media. First, the objective aspect experienced an increase in results from trial 1 to trial 2, i.e. from 81% to 93%. Second, the material aspect has decreased from 98% to 95%. Third, the aspect of using learning media has decreased from 93% to 92%. Fourth, the success aspect of learning media has increased from 88% to 94%. The percentage results above show a very good category so that learning media is carried out.

b. Test the effectiveness of learning media

1) Normality test

Table 6. Normality Test Results of Group Test

| kelompok | | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|----------|-----------|---------------------------------|----|-------|--------------|----|------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Nilai | Pre test | .233 | 10 | .133 | .904 | 10 | .245 |
| | Post test | .200 | 10 | .200* | .832 | 10 | .035 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on table 6, normality test results shows table values and groups. Group tables show group pre-test and post-test. In the Shapiro Wilk test it was produced a different significance, i.e. in the pre-test data obtained significance 0.245 while in the post-test obtained significance 0.35. From the results second test type shows significance > 0.05 that means H_0 is accepted with statement the hypothesis that the data is normally distributed.

2) Hypothesis test

Table 7. Paired T Test Results of Group Test

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|--------------------|--------------------|----------------|-----------------|---|---------|--------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | Pretest - Posttest | -14.000 | 5.164 | 1.633 | -17.694 | -10.306 | -8.573 | 9 | .000 |

Based on table 7, the results of the paired sample t test found that the average result is negative f. This shows that the average post-test bigger than pre-test. The resulting significance is 0.000. It shows test results < 0.05 that means H_0 is rejected with conclusion there is significant difference in mean scores between before and after using learning media educational

application. With such is the learning media already effective used because there is significant difference.

3) N Gain effectiveness test

Table 8. The Average Result of N Gain Test

| Descriptive Statistics | | | | | |
|------------------------|----|---------|---------|-------|----------------|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| Ngain_Score | 10 | .33 | 1.00 | .6500 | .26586 |
| Valid N (listwise) | 10 | | | | |

Based on table 8, there is N Gain results with an average of 0.6500 that means level enter in category tall because based on data interpretation N Gain $0.3 \geq 0.6500 \leq 0.7$. Value 0.6500 is bigger than 0.3 and smaller than 0.7.

Field test

The effectiveness of learning media test

1) Normality test

Table 9. Normality Test Results of Field Test

| Tests of Normality | | | | | | | |
|--------------------|----------|---------------------------------|----|------|--------------|----|------|
| Kategori | | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Nilai | Pretest | .185 | 52 | .061 | .914 | 52 | .078 |
| | Posttest | .329 | 52 | .092 | .761 | 52 | .094 |

a. Lilliefors Significance Correction

Based on table 9 normality test results, it is known that the probability value (Sig.) for pre-test data has a probability value (Sig.) is 0.078 bigger than 0.05, and post-test data has a probability value (Sig.) is 0.094 bigger than 0.05. Referring to the provision that, if the probability or significance value is bigger than 0.05 then the data is normally distributed. Based on the results of the data analysis, it can be concluded that the pre-test and post-test data are at the normal distribution level.

2) Hypothesis test

Table 10. Paired T Test Results of Field Test

| Paired Samples Test | | | | | | | | | |
|---------------------|--------------------|--------------------|----------------|-----------------|---|--------|--------|----|-----------------|
| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | pretest - posttest | -9.808 | 8.743 | 1.212 | -12.242 | -7.374 | -8.090 | 51 | .000 |

Based on table 10 paired t test results, paired sample t test did a starch the average result is negative f. This shows that the average post-test bigger than pre-test. The resulting significance is 0.000. It shows test results < 0.05 that means H_0 is rejected with conclusion there is significant difference in mean scores between before and after using educational application. With such is the learning media already effective used because there is significant difference.

3) N Gain effectiveness test

**Table 11. The Average Result of N Gain Test
Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|----|---------|---------|-------|----------------|
| Ngain_Score | 52 | .00 | 1.00 | .6891 | .25518 |
| Valid N (listwise) | 52 | | | | |

Based on table 11, there is N Gain results with an average of 0.6891 that means level enter in category currently because based on data interpretation N Gain $0.3 \geq 0.6891 \leq 0.7$. Value 0.6891 bigger than 0.3 and smaller than 0.7.

Evaluation

The final stage in the ADDIE development model is evaluation. First, assessing from the responses of students during group tests and field tests, the responses of students showed a good response by looking at the percentage of those who voted strongly agreed on each indicator used as an instrument to measure their responses. Likewise, the results of the implementation given to Islamic Education teachers and observers also showed a positive response, and the learning media had been implemented, especially when there was an increase in assessment from group tests to field tests.

Second, this is seen from the learning outcomes of students taken from the pre-test and post-test scores given during learning. Even though before using the learning media educational application, they were able to get a relatively good grade, after the implementation of the application there was a change in student' grades. It can be seen from the N Gain table that there are changes in students' pre-test and post-test scores. This shows that educational application learning media can be implemented properly.

1. Implementation of learning media

On the implementation of learning media, the results were obtained from the observation sheets of Islamic education teachers and observers as well as student response questionnaires. In the observations made by Islamic education teachers and observers, found that the average percentage of learning media implementation was 84% in the very good category. However, in the field test, better results were found, i.e. the average implementation of learning media was 90% in the very good category.

In the student response questionnaire during the group test, the percentage of student responses on the aspect of objectives with the lowest score was 81% but the average percentage of learning media implementation was 90% with a very good category. After having improvements to the field test the students' responses was better than before, this can be seen from the percentage that experienced an increase in all aspects with a significant increase and the average implementation of learning media reached 93% with a very good category.

There is an increase in the implementation of learning media influenced by the responses of students and the teacher himself. Meanwhile, according to Danamic, response is a reaction in the form of acceptance or rejection as well as indifference to what is conveyed by the communicator. Using a variety of learning media can excite students in the learning process,

make students learn more independently and overcome the passive attitude of students. The use of learning media also provides the same experience for each student (Nova, 2021).

2. The Effectiveness of Learning Media

The symbol system theory was first initiated by G. Salomon and is a theory aimed at explaining the impact of media on learning. According to Salomon, every medium has the ability to convey content through a certain symbol system. Salomon further stated that the effectiveness of a media depends on its suitability for students or students, content, and assignments.

In the effectiveness test, the researcher conducted two test stages to ensure the effectiveness of the learning media used. Before carrying out the effectiveness test, prerequisite tests and hypothesis tests must be carried out. The prerequisite test is the normality test. In the group test, the normality test produces normal data so that parametric tests can be carried out to test the hypothesis. The parametric test used is the paired t test. The paired test produces a significance of 0.000. These results indicate that the accepted hypothesis is that there is a significant difference in average scores between before and after using educational application learning media. After knowing that there are differences, the effectiveness of using N Gain will be tested to determine the effective level of learning media. In the N Gain test, there is an average result of 0.6500. With this average level of effectiveness of learning media is categorized as high.

The field test was carried out in the same way as the group test. At this stage, what is different is the result of the N Gain test. In the paired t test obtained the same significance, i.e. 0.000. With a low result the better because it indicates a larger average difference. Whereas in the N Gain test, the average value is 0.6891, this number has increased from the group test, which is 0.6500. The average value of N Gain is said to be in the medium category because it is based on the interpretation of the N Gain value of 0.3.

Learning effectiveness has certain criteria as measured by student learning outcomes, student responses, and learning implementation. The learning outcomes of students will show that the use of educational application learning media is effective if there is an increase in learning outcomes with the average category of students at least enough with a score of 75 (Setyo, 2020).

Conclusion

Based on the data analysis and discussion that has been done before, it is concluded:

1. Learning media educational application products can be implemented with an average implementation value of 95% and included in the *very good* category. Apart from that, the students' responses also showed a percentage value of 93% in the *very good* category.
2. Learning media educational application products are effectively used as learning media with the results of the *paired T Test* in the field test obtaining a significance of 0.000 which is less than a significance level of 0.05 and an average *N Gain* result of 0.6891 which states that the effectiveness of learning media is categorized as moderate.

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